

Original

RECEIVED
6-15-03**REMARKS****THE CLAIMS****REJECTION UNDER 35 U.S.C 103****A. Claims 1, 3, 5, 6, 13, 16, 39, 40, 42, 45, and 46**

Claims 1, 3, 5, 6, 13, 16, 39, 40, 42, 45, and 46 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al., U.S. Pat. No. 5,911,139 (hereinafter "Jain"), in view of Polnerow et al., U.S. Pat. No. 5,813,006 (hereinafter "Polnerow").

Applicant respectfully traverses this rejection and submits that the claims on file are not obvious in view of Jain in light of Polnerow, and are patentable thereover. In support of this position, Applicant submits the following arguments:

B. Legal Standards for Obviousness

The following are court opinions set the general standards in support of Applicant's position of non-obviousness, with emphasis added for clarity purpose:

- **"Obviousness cannot be established** by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion** supporting the combination." *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1598 (citing *ACS Hosp. Sys. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). **What a reference teaches** and whether it teaches toward or **away from the claimed invention** are questions of fact. See *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 960-61, 220 USPQ 592, 599-600 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984). "
- "When a rejection depends on a combination of prior art references, **there must be some teaching, suggestion, or motivation** to combine the references. See *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)."

AM9-99-0227

8

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention **where there is some teaching, suggestion, or motivation** to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See MPEP 2143.01; *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

- "With respect to core factual findings in a determination of patentability, however, the **Board cannot simply reach conclusions based on its own understanding or experience** – or on its assessment of what would be basic knowledge or common sense. **Rather, the Board must point to some concrete evidence in the record** in support of these findings." See *In re Zurko*, 258 F.3d 1379 (Fed. Cir. 2001).
- "We have noted that **evidence of a suggestion, teaching, or motivation to combine** may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), *Para-Ordinance Mfg. v. SGS Imports Intern., Inc.*, 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, **the showing must be clear and particular**. See, e.g., *C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. **Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."** E.g., *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact."); *In re Sichert*, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977)." See *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999).
- "To prevent the use of hindsight based on the invention to defeat patentability of the invention, **this court requires the examiner to show a motivation to combine the references** that create the case of obviousness. In other words, **the examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references **for combination in the manner claimed**." See *In re Rouffet*, 149, F.3d 1350 (Fed. Cir. 1998).
- MPEP 2143.01-"The Prior Art Must Suggest The Desirability Of The Claimed Invention. There are three possible sources for a motivation to combine

references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (**The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper.**). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

- The mere fact that references can be combined or modified does not render the resultant combination obvious **unless the prior art also suggests the desirability of the combination.** In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, **there must be a suggestion or motivation in the reference** to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).
- If the **proposed modification would render the prior art invention being modified unsatisfactory** for its intended purpose, **then there is no suggestion or motivation** to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

C. Jain

Prior to discussing the substantive merit of the obviousness rejections, it might be desirable to summarily review the Jain patent. Jain generally describes a system and method for **content-based** search and retrieval of visual objects. A base visual information retrieval (VIR) engine utilizes a set of universal primitives to operate on the visual objects. An extensible VIR engine allows custom, modular primitives to be defined and registered. A custom primitive addresses domain specific problems can utilize image understanding techniques. Object attributes can be extracted over the entire image or over only a portion of the object. **A schema is defined as a specific collection of primitives.** A specific schema implies a specific set of visual features to be processed and a corresponding feature vector to be used for content-based similarity scoring. A primitive registration interface registers custom primitives and

facilitates storing of an analysis function and a comparison function to a schema table. A heterogeneous comparison allows objects analyzed by different schemas to be compared if at least one primitive is in common between the schemas. A threshold-based comparison is utilized to improve performance of the VIR engine. A distance between two feature vectors is computed in any of the comparison processes so as to generate a similarity score. Refer to the Abstract.

"The VIR Engine 120 comprises two main modules: an "Image Analysis" module 122 and an "Image Comparison" module 124. The image analysis module 122 receives inputs from either module 108 or 110 to generate a query target or from the insertion module 112 for adding a new image into the database 132. The output of the image analysis module 122 is a feature vector (FV) that describes the visual object passed to it by one of modules 108, 110 or 112. The FV is passed on to the database engine 130. In addition, if module 112 was used to insert the image into the database, both the FV for the image and the image itself are stored in the database 132 (as seen in FIG. 5B). The image analysis module 122 will be described in greater detail hereinbelow.

The image comparison module 124 receives a query target FV and a FV for the image being tested or compared from the database engine 130. The output of the image comparison module 124 is a similarity score that is sent to a "Ranked List Management" module 134. A plurality of images from the database 132 are compared one at a time to the query image by the image comparison module 124. The resultant similarity scores are accumulated by the module 134 so as to provide a rank in an order of their similarity to the query image. The ranked results of the list management module 134 are provided to a "Thumbnail Results Browser" 136 for display to the user 102 through the computer I/O 104. An exemplary screen display of ranked results is shown in FIG. 4." Reference is made to FIG. 1A, and further to column 9, lines 41 - 67.

"What is needed is a new multimedia information system technology model such as a visual information management system (VIMSYS) model. Unlike traditional database systems, this model recognizes that most users prefer **to search image and video information by what the image or video actually contains, rather than by keywords or descriptions associated with the visual information.** The **only** proper method by which the user can get access to the content of the image is by using image-analysis technology **to extract the content from an image or video.** Once extracted, the content represents most of what the user needs in order to organize, search, and locate necessary visual information.

This breakthrough concept of **content extraction** alleviates several technological problems. The foremost benefit is that it gives a user the power to retrieve visual information **by asking a query like "Give me all pictures that look like this."** The system satisfies the query by **comparing the content of the query picture** with that of all target pictures in the database. This is called Query By Pictorial Example (QBPE), and is a simple form of **content-based retrieval**, a new paradigm in database management systems." Reference is made to column 2, lines 53 - 65, with emphasis added.

D. Application of the Obviousness Standard to the Present Invention

D.1. Elements not disclosed by Jain

Applicant respectfully submits that the following elements and combination of elements and resulting features recited in the representative independent claim 1 and the claims dependent thereon, are not disclosed in Jain (with emphasis added):

- "1. A system for **automatically** associating **contextual input data** with available multimedia resources, comprising:
a contextual input device for **capturing the contextual input data;**

an assistant device for processing the contextual input data captured by the contextual input device, and for formulating a query based on processed contextual input data and a user profile; and

a contextual multimedia association module for associating the processed contextual input data with the multimedia resources and for generating association matches." Emphasis added.

D.2. Summary of Arguments

Applicant incorporates by reference all the arguments made in the previous response, and further respectfully submits a summary of the arguments to be developed in more detail in subsequent sections:

D.2.a: Jain does not capture contextual input data.

D.2.b: Jain does not formulate a query based on the processed contextual input data and the user profile.

D.2.a: Jain does not capture contextual input data

As it is clear from the Jain excerpts above, Jain's method is strictly content-based, in that it is limiting to discovering and cataloguing the content of the input image. Jain does not capture contextual input data, as understood and defined in the present application.

The term "contextual" is a key concept to the present invention, and is mentioned eight times in the instant claim 1. Applicant respectfully requests that this term be given its proper weight and not be summarily dismissed. The term "contextual" is clearly defined in the present application as follows:

"As used herein, "contextual" means or implies the surrounding circumstances in which an object exists or an event occurs. For example, the contextual content of a photograph can be all the information surrounding the situation in which the photograph is taken, including special and physical parameters such as time, location, elevation, etc., as well as information gathered by various sensors such as temperature, pressure, humidity, light level, sound, and acceleration sensors, and user interface elements such as buttons, switches, etc. The contextual data helps to understand the context of the acquired data." Reference is made to page 7, lines 5 - 12 of the present application, with emphasis added for clarity.

"Exemplary, non-exclusive contextual data include environmental and geospatial coordinates, time, temperature, location, speed, motion, acceleration, and other parameters." Reference is made to page 7, lines 1 - 3 of the present application, with emphasis added for clarity.

The concept of capturing contextual input contextual input data, and then processing the captured contextual input data is neither taught nor suggested in Jain.

The text cited by the Examiner, which was reproduced in part, above, supports the finding that the capture of visual information is limited in scope to the content of the captured data. **THE CITED TEXT CONFIRMS THAT JAIN IS CONTENT-BASED, AS OPPOSED TO CONTEXT-BASED,** in that Jain seems to disregard the surrounding circumstances, such as the environmental and geospatial coordinates, time, temperature, location, speed, motion, or acceleration in which the content exists or the event occurs.

**D. 2.b. Jain does not teach automatically
formulating the query based on the
contextual input data and the user profile**

(1) Applicant agrees with the Examiner that Jain does not teach automatically formulating the query based on the user profile.

(2) Furthermore, Applicant submits that Jain does not teach automatically formulating the query based on the contextual input data, since, as stated earlier, Jain seems to ignore the contextual data, and rather focuses on the content data.

In order to compensate for the first missing element, the office action resorts to Polnerow, as discussed below.

D. 3. The combination of Jain and Polnerow is improper

In support of the combination of Jain and Polnerow, the office action adds that Polnerow teaches searching based on user profile (see col. 1, lines 55-65 and column 10, lines 53-54), reasoning that:

"It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Polnerow within the system of Jain by automatically searching database for information based on user profile within the contextual input data and multimedia data system associating system and method because. Jain teaches of user specific property or attribute of the image for performing queries (see col.4, lines 21-40) and such attributes could be users preference according to the users profile. Since user supplies the property or attributes, theses attributes or properties could be derived according to users preference such as users profile."

Applicant respectfully traverses this rejection ground and submits the following arguments:

(1) Jain limits the "specific property or attribute of the image" to what is referred to as "primitives" of the content. See for example, column 6, lines 20-21 in Jain. There is, however, no justification or teaching in Jain to expand the "specific property or attribute of the image" to cover "the user's profile," particularly that Jain does not consider the user's profile to be an attribute of the image. This latter point is discussed in more detail below.

(2) In addition, Polnerow does not disclose formulating the query based on the user's profile **"for automatically associating contextual input data** with available multimedia resources."

(3) Furthermore, neither Polnerow nor Jain teaches or suggests "formulating a query based on **processed contextual input data**," as presented earlier, and as clearly defined in the present application.

(4) The Examiner bases the ground for combining Jain on Polnerow on the user's profile, but does not provide any ground for combining these two references based on the **processed contextual input data**. Applicant submits that these two references cannot be justifiably combined based on the **processed contextual input data**, since this feature is neither suggested nor taught by any of these two references.

Claim 1 and the claims dependent thereon are allowable, and such allowance is respectfully requested. Similarly, independent claims 13 and 39 and the claims dependent thereon are allowable for reciting comparable elements to those of claim 1.

Office
of the
Patent
ExaminerRECEIVED
6-15-03**E. Dependent Claims****E. 1. Claims 7, 17, and 43**

Claims 7, 17, and 43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jain in view of Bull.

Applicant respectfully traverses this rejection and submits that the rejected claims are not obvious in view of Jain and Bull, and are thus patentable thereover. In support of this position, Applicant submits Bull was referred to as teaching the development of a user profile.

Applicant respectfully submits that the same arguments presented earlier in favor of allowance of claim 1 over Jain and Polnerow are equally applicable to the combination of Jain and Bull. Further, Bull stands for the generally known concept of developing a user profile, which, by itself, does not constitute the novel and patentable aspect of the present invention.

The combination of Jain and Bull does not disclose the following elements of the representative claim 7:

- "formulating a query based on processed contextual input data and a user profile"; and
- "the assistant device develops the user profile based on association matches that were previously presented to the user".

Claim 7 and the claims dependent thereon are allowable, and such allowance is respectfully requested. Similarly, independent claims 17 and 43 and the claims dependent thereon are allowable for reciting comparable elements to those of claim 7.

E. 2. Claims 8, 18, and 44

The office action states that with regard to claims 8, 18, and 44, **"Jain does not teach wherein the assistant device updates the user digital profile based on recent association matches. Bull teaches of updating the user digital profile based on recent association matches"** (see col.8, line 65 to col.9, line 2 and col.12, lines 2-4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Bull within the system of Jain by updating user profile within the contextual input data and multimedia data system associating system and method because, this would keep track of the potential future user as well as keep track of the user's preferences for future search "primitives" to speed up the processing time." Emphasis added.

Applicant respectfully submits that the following elements and combination of elements and resulting features recited in the representative dependent claim 8 and the claims dependent thereon, are not disclosed in Jain (with emphasis added):

"8. The system according to claim 7, wherein the assistant **device updates the user digital profile based on recent association matches.**" Emphasis added

Applicant incorporates herein the presentation made earlier in favor of the allowance of claim 7, and further respectfully submits that claim 8 depends on claims 1 and 7 as now amended, to include the following elements that are missing from Jain and Bull:

- "formulating a query based on processed contextual input data and a user profile";
- "the assistant device develops the user profile based on association matches that were previously presented to the user"; and

RECEIVED
6-13-03

- "the assistant device updates the user digital profile based on recent association matches".

Claim 8 and the claims dependent thereon are allowable, and such allowance is respectfully requested. Similarly, independent claims 18 and 44 and the claims dependent thereon are allowable for reciting comparable elements to those of claim 8.

E. 3. Remaining dependent claims

The remaining dependent claims are allowable for depending on the allowable claims 1, 13, and 39, as presented earlier.

TELEPHONE INTERVIEW

The undersigned respectfully reiterates his request for a telephone interview with the following agenda: "Discuss claim 1 in view of Jain, Polnerow, and Bull," particularly in view of the "contextual" input data concept that is not disclosed in any of these three references.

Official

RECEIVED
6-15-03**CONCLUSION**

All the claims presently on file in the present application are in condition for immediate allowance, and such action is respectfully requested. If it is felt for any reason that direct communication would serve to advance prosecution of this case to finality, the Examiner is invited to call the undersigned at the below-listed telephone number.

Respectfully submitted,

Date: June 16, 2003

Samuel A. Kassatly
Attorney for Applicant
Reg. No. 32,247
Tel. (408) 323-5111

AM9-99-0227

20